GED TESTING SERVICE®

Chapter 2

Assessment Guide for Educators

A guide to the 2014 assessment content from GED Testing Service

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What is Webb's Depth of Knowledge Model?

Introduction

In 2014, GED Testing Service will unveil a new assessment that fundamentally changes the GED® test and does a better job measuring the preparedness of adult learners for lifelong success. Four content-area assessments—Reasoning Through Language Arts (RLA), Mathematical Reasoning, Science, and Social Studies—measure a foundational core of knowledge and skills that are essential for career and college readiness.

The Assessment Guide for Educators is a frontline resource that helps adult educators and administrators better understand the content of the new assessment. Chapter 2 focuses on Webb's Depth of Knowledge model, assessment targets for all four content areas, and passage requirements and exemplars for the RLA Test.

A GED® graduate must remain competitive with students who complete their high school credentials in the traditional manner. As the education community embraces career- and college-readiness standards—such as Common Core State Standards and prevailing state standards—the new GED® assessment will meet the market's demand for test-takers to be able to demonstrate these high-level skills. It's a stepping-stone toward a college classroom or a better career and a family-sustaining wage.

Webb's Depth of Knowledge Model

The Depth of Knowledge (DOK) model is a framework for analyzing a wide range of educational materials on the basis of the cognitive demands they require in order for a learner to produce a response to those materials.[1] In 1997, Dr. Norman L. Webb developed this model for analyzing the varying levels of cognitive complexity in academic standards and curricula. GED Testing Service is using Webb's DOK model to guide item development for the new assessment, in the same manner as Bloom's Taxonomy of learning objectives was used to guide development of the 2002 Series GED® Test.

[1] http://www.aps.edu/rda/documents/resources/Webbs_DOK_Guide.pdf

From Chapter One:
Employing a wide variety of item types should allow us to assess targeted content at a number of Depth of Knowledge levels.

Find more information about the new assessment in chapters one and three of the Assessment Guide for Educators:

- Item types
- Item layouts
- Terminology
- Scoring rubric information
- Reporting category descriptors
- More

Differences between Bloom's Taxonomy and Webb's DOK are shown in the comparison table on page 2.3.

At first glance, DOK might seem to resemble Bloom's Taxonomy, but DOK actually takes a different approach. In Bloom's Taxonomy, the focus is on a learner's activity (e.g. applying, analyzing, creating, etc.). In DOK, the emphasis is on the *complexity* of the cognitive processes that each of those activities (applying, analyzing, creating) requires on the part of the learner. The DOK model also makes an important distinction between *difficulty* and *complexity*. Educators and test developers know that not all test-takers find the same items equally difficult; the assessment of a test item's *complexity,* however, is far more consistent among test-takers. The term *complexity* does not refer to the level of challenge in an item, but rather to the cognitive steps a test-taker must go through to arrive at a correct answer.

For example, listing all U.S. presidents in order is relatively simple for someone who has memorized the list, but it would be quite difficult for someone who has not. Regardless of difficulty, this task would have a cognitive complexity DOK level of one, as it is a straightforward task requiring direct recall. On the other hand, comparing the role of the legislative branch with the judicial branch requires more strategic analysis of governmental branches. This task would have a cognitive complexity DOK level of three. DOK level is determined by content experts and experienced educators; difficulty is measured empirically when the items are field-tested. Items with higher DOK levels tend to be more difficult than items with a lower DOK level, but that is not necessarily or always the case.

In the development of items for the new GED® assessment, we will create items that use the DOK model to engage test-takers at a variety of levels of cognitive complexity. Roughly 80 percent of the items across all four content areas will be written to DOK levels two and three, and roughly 20 percent will require test-takers to engage level one DOK skills. However, as the DOK tables for each GED® assessment content area make clear, level four DOK entails extended reasoning and investigation (e.g. skills required to successfully complete long-term research projects). Therefore, DOK level four is beyond the scope of this assessment.

"Roughly 80 percent of the items across all four content areas will be written to DOK levels two and three, and roughly 20 percent will require test-takers to engage level one DOK skills."

A Comparison: Bloom's Taxonomy and Webb's Depth of Knowledge[2]

BLOOM'S TAXONOMY	WEBB'S DEPTH OF KNOWLEDGE[3]
KNOWLEDGE "The recall of specifics and universals, involving little more than bringing to mind the appropriate material"	**RECALL** Recall of a fact, information, or procedure (e.g. What are three critical skill cues for the overhand throw?)
COMPREHENSION "Ability to process knowledge on a low level such that the knowledge can be reproduced or communicated without a verbatim repetition."	
APPLICATION "The use of abstractions in concrete situations."	**BASIC APPLICATION OF SKILL/CONCEPT** Use of information, conceptual knowledge, procedures, two or more steps, etc. (e.g. Explain why each skill cue is important to the overhand throw. "By stepping forward you are able to throw the ball further.")
ANALYSIS "The breakdown of a situation into its component parts."	**STRATEGIC THINKING** Requires reasoning, developing a plan or sequence of steps; has some complexity; more than one possible answer; generally takes less than ten minutes to do (e.g. Design 2 different plays in basketball and explain what different skills are needed and when the plays should be carried out.)
SYNTHESIS AND EVALUATION "Putting together elements & parts to form a whole, then making value judgments about the method."	**EXTENDED THINKING** Requires an investigation; time to think and process multiple conditions of the problem or task; and more than ten minutes to do non-routine manipulations (e.g. Analyze three different tennis, racquetball, and badminton strokes for similarities, differences, and purposes. Then, discuss the relationship between the mechanics of the stroke and the strategy for using the stroke during game play.)

2 Bloom's Taxonomy and Webb's Depth of Knowledge comparison table source: http://www.palmbeachschools.org/qa/documents/WebbsDepthofKnowledge.pdf

3 Each of the four descriptions below correspond with a DOK level. For example, "Recall" corresponds to DOK 1, "Basic Application" to DOK 2, "Strategic Thinking" to DOK 3, and "Extended Thinking" to DOK 4.

English Language Arts[4]

Subject	Depth of Knowledge			
	Level 1	Level 2	Level 3	Level 4
English Language Arts	Requires students to recall, observe, question, or represent facts or simple skills or abilities. Requires only surface understanding of text, often verbatim recall or slight paraphrasing. Use conventions of standard English. Examples: • Support ideas by reference to specific details in text • Use dictionary to find meaning • Use punctuation marks correctly • Identify figurative language in passage • Identify correct spelling or meaning of words	Requires processing beyond recall and observation. Requires both comprehension and subsequent processing of text. Involves ordering, classifying text as well as identifying patterns, relationships and main points. Connect ideas using simple organizational structures. Requires some scrutiny of text. Examples: • Use contextual clues to identify unfamiliar words • Predict logical outcome • Construct or edit compound or complex sentences • Identify and summarize main points • Apply knowledge of conventions of standard American English • Compose accurate summaries	Requires students to go beyond text. Requires students to explain, generalize, and connect ideas. Involves inferencing, prediction, elaboration, and summary. Requires students to support positions using prior knowledge and to manipulate themes across passages. Students develop compositions with multiple paragraphs. Examples: • Determine effect of author's purpose on text elements • Summarize information from multiple sources • Critically analyze literature • Edit writing to produce logical progression • Compose focused, organized, coherent, purposeful prose	Requires extended higher order processing. Typically requires extended time to complete task, but time spent not on repetitive tasks. Involves taking information from one text/passage and applying this information to a new task. May require generating hypotheses and performing complex analyses and connections among texts. Examples: • Analyze and synthesize information from multiple sources • Examine and explain alternative perspectives across sources • Describe and illustrate common themes across a variety of texts • Create compositions that synthesize, analyze, and evaluate

4 The English Language Arts table is used with permission of Dr. Norman L. Webb from the University of Wisconsin Center for Educational Research.

Mathematics[5]

Subject	Depth of Knowledge			
	Level 1	Level 2	Level 3	Level 4
Mathematics	Requires students to recall or observe facts, definitions, or terms. Involves simple one-step procedures. Involves computing simple algorithms (e.g. sum, quotient). Examples: • Recall or recognize a fact, term or property • Represent in words, pictures or symbols in a math object or relationship • Perform routine procedure like measuring	Requires students to make decisions of how to approach a problem. Requires students to compare, classify, organize, estimate, or order data. Typically involves two-step procedures. Examples: • Specify and explain relationships between facts, terms, properties or operations • Select procedure according to criteria and perform it • Solve routine multiple-step problems	Requires reasoning, planning, or use of evidence to solve problem or algorithm. May involve activity with more than one possible answer. Requires conjecture or restructuring of problems. Involves drawing conclusions from observations, citing evidence, and developing logical arguments for concepts. Uses concepts to solve non-routine problems. Examples: • Analyze similarities and differences between procedures • Formulate original problem given situation • Formulate mathematical model for complex situation	Requires complex reasoning, planning, developing, and thinking. Typically requires extended time to complete problem, but time spent not on repetitive tasks. Requires students to make several connections and apply one approach among many to solve the problem. Involves complex restructuring of data, establishing and evaluating criteria to solve problems. Examples: • Apply mathematical model to illuminate a problem, situation • Conduct a project that specifies a problem, identifies solution paths, solves the problem, and reports results • Design a mathematical model to inform and solve a practical or abstract situation

5 The Mathematics table is used with permission of Dr. Norman L. Webb from the University of Wisconsin Center for Educational Research.

Science[6]

Depth of Knowledge Level Descriptors for Science			
Level 1 Recall & Reproduction	Level 2 Skills & Concepts	Level 3 Strategic Thinking	Level 4 Extended Thinking
a. Recall or recognize a fact, term, definition, simple procedure (such as one step), or property b. Demonstrate a rote response c. Use a well-known formula d. Represent in words or diagrams a scientific concept or relationship e. Provide or recognize a standard scientific representation for simple phenomenon f. Perform a routine procedure, such as measuring length g. Perform a simple science process or a set procedure (like a recipe) h. Perform a clearly defined set of steps i. Identify, calculate, or measure **NOTE:** If the knowledge necessary to answer an item automatically provides the answer, it is a Level 1.	a. Specify and explain the relationship between facts, terms, properties, or variables b. Describe and explain examples and non- examples of science concepts c. Select a procedure according to specified criteria and perform it d. Formulate a routine problem given data and conditions e. Organize, represent, and compare data f. Make a decision as to how to approach the problem g. Classify, organize, or estimate h. Compare data i. Make observations j. Interpret information from a simple graph k. Collect and display data **NOTE:** If the knowledge necessary to answer an item does not automatically provide the answer, then the item is at least a Level 2. Most actions imply more than one step. **NOTE:** Level 3 is complex and abstract. If more than one response is possible, it is at least a Level 3 and calls for use of reasoning, justification, evidence, as support for the response.	a. Interpret information from a complex graph (such as determining features of the graph or aggregating data in the graph) b. Use reasoning, planning, and evidence c. Explain thinking (beyond a simple explanation or using only a word or two to respond) d. Justify a response e. Identify research questions and design investigations for a scientific problem f. Use concepts to solve non-routine problems/more than one possible answer g. Develop a scientific model for a complex situation h. Form conclusions from experimental or observational data i. Complete a multi-step problem that involves planning and reasoning j. Provide an explanation of a principle k. Justify a response when more than one answer is possible l. Cite evidence and develop a logical argument for concepts m. Conduct a designed investigation n. Research and explain a scientific concept o. Explain phenomena in terms of concepts	a. Select or devise approach among many alternatives to solve problem b. Based on provided data from a complex experiment that is novel to the student, deduct the fundamental relationship between several controlled variables c. Conduct an investigation, from specifying a problem to designing and carrying out an experiment, to analyzing its data and forming conclusions d. Relate ideas within the content area or among content areas e. Develop generalizations of the results obtained and the strategies used and apply them to new problem situations **NOTE:** Level 4 activities often require an extended period of time for carrying out multiple steps; however, time alone is not a distinguishing factor if skills and concepts are simply repetitive over time.

6 © Karin K. Hess, National Center of Assessment, Dover, NH. khess@nciea.org. Link: http://www.nciea.org/publications/DOKscience_KH11.pdf

Social Studies[7]

Depth of Knowledge Level Descriptors for Social Studies			
Level 1 Recall of Information	Level 2 Basic Reasoning	Level 3 Complex Reasoning	Level 4 Extended Reasoning
a. Recall or recognition of: fact, term, concept, trend, generalization, event, or document b. Identify or describe features of places or people c. Identify key figures in a particular context meaning of words d. Describe or explain: who, what, where, when e. Identify specific information contained in maps, charts, tables, graphs, or drawings	a. Describe cause-effect of particular events b. Describe or explain: how (relationships or results), why, points of view, processes, significance, or impact c. Identify patterns in events or behavior d. Categorize events or figures in history into meaningful groups e. Identify and summarize the major events, problem, solution, conflicts f. Distinguish between fact and opinion g. Organize information to show relationships h. Compare and contrast people, events, places, concepts i. Give examples and non-examples to illustrate an idea/concept	a. Explain, generalize, or b. connect ideas, using supporting evidence from a text/source c. Apply a concept in other contexts d. Make and support inferences about implied causes and effects e. Draw conclusion or form alternative conclusions f. Analyze how changes have affected people or places g. Use concepts to solve problems h. Analyze similarities and differences in issues or problems i. Propose and evaluate solutions j. Recognize and explain misconceptions related to concepts	a. Analyze and explain multiple perspectives or issues within or across time periods, events, or cultures b. Gather, analyze, organize, and synthesize information from multiple (print and non print) sources c. Make predictions with evidence as support d. Plan and develop solutions to problems e. Given a situation/problem, research, define, and describe the situation/problem and provide alternative solutions f. Describe, define, and illustrate common social, historical, economic, or geographical themes and how they interrelate

7 © Karin K. Hess, National Center of Assessment, Dover, NH. khess@nciea.org. Link: http://www.nciea.org/publications/DOKsocialstudies_KH08.pdf

Assessment Targets for All Four Content Areas

The purposes of the GED® assessment are to provide:

1. A path to a high school credential
2. Evidence of readiness to enter workforce training programs or postsecondary education
3. Information about a candidate's strengths and areas of developmental need in key academic areas

The philosophy underlying the GED® assessment is that there is a foundational core, or *domain*, of academic skills and content knowledge that must be acquired in order for an adult to be prepared to enter a job, a training program, or an entry-level, credit-bearing postsecondary course. This foundational core of knowledge and skills is defined by career- and college-readiness standards now adopted by the majority of states.

Domain is a foundational core of academic skills and content knowledge.

Reasoning Through Language Arts (RLA) Assessment Targets

Content Parameters for RLA

In alignment with career- and college-readiness standards, the GED® RLA assessment focuses on three essential groupings of skills:

- The ability to read closely
- The ability to write clearly
- The ability to edit and understand the use of standard written English in context

Because the strongest predictor of career and college readiness is the ability to read and comprehend complex texts, especially nonfiction, the RLA Test will include texts from both academic and workplace contexts. These texts will reflect a range of complexity levels, in terms of ideas, syntax and style. The writing tasks, or Extended Response (ER) items, will require test-takers to analyze given source texts and use evidence drawn from the text(s) to support their answers.

Given these priorities, the GED® RLA Test adheres to the following parameters:

1. Seventy-five percent of the texts in the exam will be informational texts (including nonfiction drawn from the science and the social studies as well as a range of texts from workplace contexts); 25 percent will be literature.

2. The texts included in the test will cover a range of text complexity, including texts at the career- and college-readiness level.

3. For texts in which comprehension hinges on vocabulary, the focus will be on understanding words that appear frequently in texts from a wide variety of disciplines and, by their definition, are not unique to a particular discipline[8].

8 The following are words that have applications in texts drawn from multiple disciplines: from informational texts (*relative*, *vary*, *formulate*, *specificity*, and *accumulate)*, from technical texts (*calibrate*, *itemize*, *periphery*), and from literary texts (*misfortune*, *dignified*, *faltered*, *unabashedly*). Unlike discipline-specific terms, these words are not limited to a particular field of study.

Assessment targets: The *assessment targets* for all four content areas provide a complete description of the skills and knowledge that will be measured on the new assessment. Evidence strongly indicates that proficiency with the core skills identified in the assessment targets is predictive of success in a wide range of career and college pathways.

About the assessment: Content parameters govern the proportions of content that will appear on the test forms and ensure item distribution across the assessment targets.

About the assessment: "The Great American Conversation" refers to texts like the founding documents (e.g. The Bill of Rights) or other sources, including more contemporary ones, that reflect important ideas about American citizenship and modern liberties.

4. U.S. founding documents and the "the Great American Conversation" that followed will be required texts for study and assessment.
5. The length of the texts included in the reading comprehension component of the test will vary between 450 and 900 words.
6. Roughly 80 percent of the items will be written to a Depth of Knowledge cognitive complexity level 2 or higher.
7. Reading and writing standards, such as those found in the Common Core State Standards, will also be measured in the GED® Social Studies Test, and the reading standards will be measured in the GED® Science Test.

Reading Comprehension on the GED® RLA Test

The reading comprehension component of the GED® RLA Test is intended to measure two overarching reading standards that appear in the Common Core State Standards as Anchor Reading Standards 1 and 10, respectively:

- Determine the details of what is explicitly stated and make logical inferences or valid claims that square with textual evidence
- Read and respond to questions from a range of texts that are from the upper levels of complexity, including texts at the career- and college-ready level of text complexity

These two high-level standards broadly govern all aspects of passage selection and item development in the reading comprehension component of the GED® RLA Test. As candidates are asked to determine the main idea, the point of view, the meaning of words and phrases, and other inferences and claims, they will be asked to do so based on texts that span a range of complexity, including texts at the career- and college-readiness level. The specific assessment targets that define the domain of the reading component of the GED® RLA Test and the connection to the Common Core State Standards are described next.

The targets and indicators in the following tables are derived from Common Core Reading Comprehension and Language Anchor Standards and govern the skills assessed in individual items.

About the assessment: Each target and indicator in the RLA assessment targets corresponds to one or more *Anchor Standards* from the Common Core State Standards for English Language Arts. For example, R.2 refers to Reading Anchor Standard 2. Similarly, W and L refer to Writing Anchor Standards and Language Anchor Standards respectively.

For more detailed information on the CCSS for English Language Arts and Literacy, go to http://www.corestandards.org/the-standards/english-language-arts-standards

Reading Assessment Targets

Common Core Connection: R.2		Range of Depth of Knowledge (DOK) Levels[9]
Determine central ideas or themes of texts and analyze their development; summarize the key supporting details and ideas.		
R.2.1	Comprehend explicit details and main ideas in text.	**1-2**
R.2.2	Summarize details and ideas in text.	**2**
R.2.3	Make sentence level inferences about details that support main ideas.	**2-3**
R.2.4	Infer implied main ideas in paragraphs or whole texts.	**2-3**
R.2.5	Determine which detail(s) support(s) a main idea.	**1-3**
R.2.6	Identify a theme, or identify which element(s) in a text support a theme.	**1-3**
R.2.7	Make evidence based generalizations or hypotheses based on details in text, including clarifications, extensions, or applications of main ideas to new situations.	**2-3**
R.2.8	Draw conclusions or make generalizations that require synthesis of multiple main ideas in text.	**2-3**
Common Core Connection: R.3		
Analyze how individuals, events, and ideas develop and interact over the course of a text.		
R.3.1	Order sequences of events in texts.	**1-2**
R.3.2	Make inferences about plot/sequence of events, characters/people, settings, or ideas in texts.	**2**
R.3.3	Analyze relationships within texts, including how events are important in relation to plot or conflict; how people, ideas, or events are connected, developed, or distinguished; how events contribute to theme or relate to key ideas; or how a setting or context shapes structure and meaning.	**2-3**
R.3.4	Infer relationships between ideas in a text (e.g., an implicit cause and effect, parallel, or contrasting relationship.	**2-3**
R.3.5	Analyze the roles that details play in complex literary or informational texts.	**2-3**
Common Core Connection: R.4.2; L4.2		
Interpret words and phrases that appear frequently in texts from a wide variety of disciplines, including determining connotative and figurative meanings from context and analyzing how specific word choices shape meaning or tone.		
R.4.1/L.4.1	Determine the meaning of words and phrases as they are used in a text, including determining connotative and figurative meanings from context.	**1-3**
R.4.2/L.4.2	Analyze how meaning or tone is affected when one word is replaced with another.	**2**
R.4.3/L.4.3	Analyze the impact of specific words, phrases, or figurative language in text, with a focus on an author's intent to convey information or construct an argument.	**2-3**

9 The Depth of Knowledge (DOK) levels correspond with Norman Webb's (University of Wisconsin) Depth of Knowledge model of cognitive complexity.

Reading Assessment Targets

Common Core Connection: R.5		Range of Depth of Knowledge (DOK) Levels
Analyze the structure of texts, including how specific sentences or paragraphs relate to each other and the whole.		
R.5.1	Analyze how a particular sentence, paragraph, chapter, or section fits into the overall structure of a text and contributes to the development of the ideas.	**2-3**
R.5.2	Analyze the structural relationship between adjacent sections of text (e.g., how one paragraph develops or refines a key concept or how one idea is distinguished from another).	**2-3**
R.5.3	Analyze transitional language or signal words (words that indicate structural relationships, such as consequently, nevertheless, otherwise) and determine how they refine meaning, emphasize certain ideas, or reinforce an author's purpose.	**2**
R.5.4	Analyze how the structure of a paragraph, section, or passage shapes meaning, emphasizes key ideas, or supports an author's purpose.	**2-3**
Common Core Connection: R.6		
Determine an author's purpose or point of view in a text and explain how it is conveyed and shapes the content and style of a text.		
R.6.1	Determine an author's point of view or purpose of a text.	**1-2**
R.6.2	Analyze how the author distinguishes his or her position from that of others or how an author acknowledges and responds to conflicting evidence or viewpoints.	**2-3**
R.6.3	Infer an author's implicit as well as explicit purposes based on details in text.	**2**
R.6.4	Analyze how an author uses rhetorical techniques to advance his or her point of view or achieve a specific purpose (e.g., analogies, enumerations, repetition and parallelism, juxtaposition of opposites, qualifying statements).	**2-3**
Common Core Connection: R.8		
Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence.		
R.8.1	Delineate the specific steps of an argument the author puts forward, including how the argument's claims build on one another.	**2-3**
R.8.2	Identify specific pieces of evidence an author uses in support of claims or conclusions.	**1-3**
R.8.3	Evaluate the relevance and sufficiency of evidence offered in support of a claim.	**2-3**
R.8.4	Distinguish claims that are supported by reasons and evidence from claims that are not.	**2-3**
R.8.5	Assess whether the reasoning is valid; identify fallacious reasoning in an argument and evaluate its impact.	**2-3**
R.8.6	Identify an underlying premise or assumption in an argument and evaluate the logical support and evidence provided.	**2-3**

Reading Assessment Targets

Common Core Connection: R.7 & R.9		Range of Depth of Knowledge (DOK) Levels
Analyze how two or more texts address similar themes or topics		
R.9.1/R. 7.1	Draw specific comparisons between two texts that address similar themes or topics or between information presented in different formats (e.g., between information presented in text and information or data summarized in a table or timeline).	**2-3**
R.9.2	Compare two passages in similar or closely related genre that share ideas or themes, focusing on similarities and/or differences in perspective, tone, style, structure, purpose, or overall impact.	**2-3**
R.9.3	Compare two argumentative passages on the same topic that present opposing claims (either main or supporting claims) and analyze how each text emphasizes different evidence or advances a different interpretation of facts.	**2-3**
R.7.2	Analyze how data or quantitative and/or visual information extends, clarifies, or contradicts information in text, or determine how data supports an author's argument.	**2-3**
R.7.3	Compare two passages that present related ideas or themes in different genre or formats (e.g., a feature article and an online FAQ or fact sheet) in order to evaluate differences in scope, purpose, emphasis, intended audience, or overall impact when comparing.	**2-3**
R.7.4	Compare two passages that present related ideas or themes in different genre or formats in order to synthesize details, draw conclusions, or apply information to new situations.	**2-3**

Writing on the GED® RLA Test

The writing component integrates reading and writing into meaningful tasks that require candidates to support their written analysis with evidence drawn from a given source text(s) of appropriate complexity provided in the test.[10] Also, given the growing demand and use of technology in all levels of postsecondary education and careers, the GED® test will be administered by computer. Therefore, as in the reading component of the RLA Test, the following two high-level standards, which correspond with Common Core Anchor Standards 9 and 6 respectively, broadly govern all aspects of the writing tasks.

1. Draw relevant and sufficient evidence from a literary or information text to support analysis and reflection.

2. Use technology to produce writing, demonstrating sufficient command of keyboarding skills.

Candidate responses will be scored by a multi-trait rubric that focuses on three elements:

- **Trait 1:** Analysis of Arguments and Use of Evidence
- **Trait 2:** Development of Ideas and Structure
- **Trait 3:** Clarity and Command of Standard English Conventions

The specific assessment targets that define the domain of the writing component of the GED® RLA Test and the connection to the Common Core State Standards are described next.

"The writing component integrates reading and writing into meaningful tasks that require candidates to support their written analysis with evidence drawn from a given source text(s) of appropriate complexity provided in the test."

10 In the Common Core State Standards, writing skills are deeply integrated with reading skills. Therefore, extended response items on the RLA test will require test-takers to apply skills described in CCSS Reading Anchor Standards 1 and 10 (see p.2 of GED® RLA Assessment Targets) as analyze source texts in their own writing.

Writing Assessment Targets

Common Core Connections: R.1		Range of Depth of Knowledge (DOK) Levels
W.1	Determine the details of what is explicitly stated and make logical inferences or valid claim that square with textual evidence.	**1-3**
Common Core Connection: W.1. W.2 and W.4		
W.2	Produce an extended analytic response in which the writer introduces the idea(s) or claim(s) clearly; creates an organization that logically sequences information; develops the idea(s) or claim(s) thoroughly with well-chosen examples, facts, or details from the text; and maintains a coherent focus.	**2-3**
Common Core Connection: W.5 and L.1, L.2. and L.3		
W.3	Write clearly and demonstrate sufficient command of standard English conventions.[11]	**1-2**

11 "Sufficient command of standard English conventions" is meant to signal that the assessment would seek "mostly correct use" by students, not "total correctness." See RLA Extended Response Scoring Rubric, Trait 3 for more information.

Language Conventions and Usage on the GED® RLA Test

The language component of the GED® RLA Test measures a candidate's ability to demonstrate command of a foundational set of conventions of standard English that have been identified as most important for career and college readiness by higher education instructors of post-secondary entry-level, credit-bearing composition courses. This core set of skills includes essential components of grammar, usage, capitalization and punctuation.

The GED® RLA Test will include editing items in an authentic context in which highlighted words or phrases appear in drop-down menus offering alternatives, which will include a clear best choice alongside common errors or misconceptions.

The specific assessment targets that define the domain of the language component of the GED® RLA Test and the connection to the Common Core State Standards are described next.

Language Assessment Targets

Common Core Connection: L.1		Range of Depth of Knowledge (DOK) Levels
Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.		
L.1.1	Edit to correct errors involving frequently confused words and homonyms, including contractions (passed, past; two, too, to; there, their, they're; knew, new; it's its).	**1-2**
L.1.2	Edit to correct errors in straightforward subject-verb agreement.	**1-2**
L.1.3	Edit to correct errors in pronoun usage, including pronoun-antecedent agreement, unclear pronoun references, and pronoun case.	**1-2**
L.1.4	*Edit to eliminate non-standard or informal usage (e.g., correctly use try to win the game instead of try and win the game).*	**1-2**
L.1.5	Edit to eliminate dangling or misplaced modifiers or illogical word order (e.g., correctly use to meet almost all requirements instead of to almost meet all requirements.)	**1-2**
L.1.6	Edit to ensure parallelism and proper subordination and coordination.	**1-2**
L.1.7	Edit to correct errors in subject-verb or pronoun antecedent agreement in more complicated situations (e.g., with compound subjects, interceding phrases, or collective nouns).	**1-2**
L.1.8	Edit to eliminate wordiness or awkward sentence construction.	**1-2**
L.1.9	Edit to ensure effective use of transitional words, conjunctive adverbs, and other words and phrases that support logic and clarity.	**1-2**

Language Assessment Targets

Common Core Connection: L.2		Range of Depth of Knowledge (DOK) Levels
Demonstrate command of the conventions of standard English capitalization and punctuation when writing.		
L.2.1	Edit to ensure correct use of capitalization (e.g., proper nouns, titles, and beginnings of sentences).	**1-2**
L.2.2	Edit to eliminate run-on sentences, fused sentences, or sentence fragments.	**1-2**
L.2.3	Edit to ensure correct use of apostrophes with possessive nouns.	**1-2**
L.2.4	Edit to ensure correct use of punctuation (e.g., commas in a series or in appositives and other non-essential elements, end marks, and appropriate punctuation for clause separation).	**1-2**

Mathematical Reasoning Assessment Targets

Content Parameters for GED® Mathematics Test

The GED® Mathematics Test will focus on two major content areas: quantitative problem solving and algebraic problem solving. Evidence that was used to inform the development of the Common Core State Standards shows that instructors of entry-level college mathematics value mastery of fundamentals over a broad, shallow coverage of topics. National remediation data are consistent with this perspective, suggesting that students with a shallow grasp of a wide range of topics are not as well prepared to succeed in postsecondary education and are more likely to need remediation in mathematics compared to those students who have a deeper understanding of more fundamental mathematical topics.[12] Therefore, the GED® Mathematics Test will focus on the fundamentals of mathematics in these two areas, striking a balance of deeper conceptual understanding, procedural skill and fluency, and the ability to apply these fundamentals in realistic situations. A variety of item types will be used in the test, including multiple-choice, drag-and-drop, hot spot, and fill-in-the-blank.

The Common Core State Standards include *Standards for Mathematical Practice*, which describe the types of practices, or behaviors, in mathematics that are essential to the mastery of mathematical content. One of the most important practices is modeling, which emphasizes the application of mathematics to real-life work situations as well as to academic problems in fields other than mathematics itself. Therefore, the GED® Mathematics Test will include modeling tasks that will require candidates to apply mathematics in a real-life context.

Given these priorities, the GED® Mathematics Test adheres to the following parameters:

1. Approximately 45 percent of the test will focus on quantitative problem solving, and roughly 55 percent will focus on algebraic problem solving.

2. The test will include items that test procedural skill and fluency as well as problem solving.

Modeling links classroom mathematics and statistics to everyday life, work, and decision-making. Modeling is the process of choosing and using appropriate mathematics and statistics to analyze empirical situations, to understand them better and improve decisions.

From Common Core State Standards for Mathematics, p. 72. www.corestandards.org

About the assessment: Content parameters govern the proportions of content that will appear on the test forms and ensure item distribution across the assessment targets.

12 http://www.act.org/research/policymakers/pdf/NCS_PolicySummary2009.pdf

3. The contexts within which problem solving skills will be measured will be taken from both academic and workforce contexts.
4. Approximately 80 percent of the items will be written to a Depth of Knowledge cognitive complexity level of 2 or higher.
5. The statistics and data interpretation standards will also be measured in the GED® Social Studies and Science tests.
6. Candidates will be provided virtual, online calculators to use on a portion of the items in the GED® Mathematics Test.

The specific assessment targets that define the domain of the GED® Mathematics Test and the connection to the Common Core State Standards are described next.

About the assessment: Each target and indicator in the Mathematics test targets corresponds with one or more domain from the Common Core State Standards (CCSS) of Mathematics as indicated by the column on the right-hand side of the Mathematics Content Matrix on the following page. For example, 6.EE refers to skills introduced in Grade 6 in the Common Core mathematics domain of Expressions & Equations. Many foundational skills assessed on the new assessment are drawn from CCSS instructional standards that are introduced in earlier grades, but must be mastered at a high school level to ensure success in careers and college.

For more detailed information on the CCSS for Mathematics, go to http://www.corestandards.org/the-standards/mathematics

Mathematics Content Matrix

Math Content Domains		Targets			Common Core State Standards References
		Foundation	Progressing	Advanced	
Quantitative Problem Solving (45%)	Number sense and computation	Q.1 Ordering and computing with rational numbers; simplifying numerical expressions; interpreting distance using a number line			6-7.NS, 3-5.NF, 8.EE, N-RN
	One-step and multi-step word problems	Q.2 Reasoning quantitatively to solve problems involving rational numbers			6-7.NS, K-5.OA, 7-8.EE, N-Q
	Rate, ratio, and percent word problems	Q.3 Solving problems involving a proportional relationship			6-7.RP, 7.EE.3, 7-G, N-Q
	Quantitative problems in geometric measurement	Q.4 Computing perimeter, circumference, and area of plane figures	Q.5 Computing volume and surface area of prisms and cylinders	Q.6 Computing volume and surface area of cones, pyramids, spheres, and other shapes	3-8.G, 6.EE
	Quantitative problems in statistical measurement[13]	Q.7 Reading and interpreting graphs, charts, and other data representations	Q.8 Measuring the center of a statistical data set	Q.9 Determining sample space and using probability models to interpret data	6-8.SP, S-CP.9, S-ID.1, S-MD.2
Algebraic Problem Solving (55%)	Transforming expressions	A.1 Simplifying, evaluating, and writing linear expressions	A.2 Simplifying, evaluating, and writing polynomial expressions	A.3 Simplifying, evaluating, and writing rational expressions	A-SSE, A-APR, 6-8.EE
	Solving equations	A.4 Writing and solving linear equations	A.5 Writing and solving linear Inequalities	A.6 Writing and solving quadratic equations	A-REI, A-CED, A-SSE, 6-8.EE
	Lines in the coordinate plane	A.7 Graphing an equation in two variables in the coordinate plane; solving problems requiring knowledge of slope	A.8 Determining the equation of a line	A.9 Applying the slope criteria for parallel or perpendicular lines	A-REI, G-GPE, 8.EE, A-CED
	Function concepts	A.10 Evaluating a function for a given input	A.11 Comparing functions in different presentations	A.12 Identifying features of a function from graphs or tables	8.F, 8.EE, F-IF

13 Statistics content embedded in Science and Social Studies content-area tests will include a) reading and interpreting graphs, charts, and other data representations in the context of the data, b) calculating measures of center and measures of variability, and c) distinguishing between correlation and causation.

Common Core State Standards References	Quantitative Problem Solving Assessment Targets		Range of Depth of Knowledge[14]
	Q.1	**Order and compute with rational numbers; simplify numerical expressions**	
4.NF.2 6.NS.6c 6.NS.7	Q.1.a	Order fractions and decimals, including on a number line.	1-2
7.NS.1d 7.NS.2c	Q.1.b	Perform addition, subtraction, multiplication, and division on rational numbers.	1-2
6.NS.4	Q.1.c	Apply number properties involving multiples and factors, such as using the least common multiple, greatest common factor, or distributive property to rewrite numeric expressions.	1-2
8.EE.1 N-RN.2	Q.1.d	Apply rules of exponents in numerical expressions with rational exponents to write equivalent expressions with rational exponents.	1-2
8.EE.2 N-RN.2	Q.1.e	Perform computations and write numerical expressions with squares and square roots of positive, rational numbers.	1-2
8.EE.2 N-RN.2	Q.1.f	Perform computations and write numerical expressions with cubes and cube roots of rational numbers.	1-2
7.NS.2b	Q.1.g	Determine when a numerical expression is undefined.	2
6.NS.7c 7.NS.1c	Q.1.h	Identify absolute value or a rational number as its distance from zero on the number line and determine the distance between two rational numbers on the number line, including using the absolute value of their difference.	1-2
	Q.2	**Quantitative reasoning to solve problems involving rational numbers**	
7.NS.3 7.EE.3 8.EE.4 N-Q.1	Q.2.a	Solve single-step or multistep real-world arithmetic problems involving the four operations with rational numbers, including those involving scientific notation.	1-3
	Q.3	**Solving problems involving a proportional relationship**	
6.RP.3 7.RP.1 G-MG.2	Q.3.a	Compute unit rates. Examples include (but are not limited to): unit pricing, constant speed, people per square mile, BTUs per cubic foot.	1-3
7.G.1	Q.3.b	Use scale factors to determine the magnitude of a size change. Convert between actual drawings and scale drawings.	1-2
6.RP.3 7.RP.1-3 N-Q.1	Q.3.c	Solve multistep real-world arithmetic problems using ratios or proportions including those that require converting units of measure.	2-3
7.RP.3	Q.3.d	Solve two-step real-world arithmetic problems involving percentages. Examples include (but are not limited to): simple interest, tax, markups and markdowns, gratuities and commissions, percent increase and decrease.	1-3

14 The Depth of Knowledge (DOK) levels correspond to Norman Webb's (University of Wisconsin) Depth of Knowledge model of cognitive complexity.

Common Core State Standards References	Quantitative Problem Solving Assessment Targets		Range of Depth of Knowledge
	Q.4	**Computing perimeter, circumference, and area of plane figures**	
7.G.6	Q.4.a	Compute the area and perimeter of triangles and rectangles. Determine side lengths of triangles and rectangles when given area or perimeter.	1-3
8.G.7	Q.4.b	Use the Pythagorean theorem to determine unknown side lengths in a right triangle.	1-3
7.G.4	Q.4.c	Compute the area and circumference of circles. Determine the radius or diameter when given area or circumference.	1-3
6.EE.2c 7.G.6	Q.4.d	Compute the perimeter of a polygon. Given a geometric formula, compute the area of a polygon. Determine side lengths of the figure when given the perimeter or area.	1-3
6.EE.2c 7.G.6 8.G.9	Q.4.e	Compute perimeter and area of 2-D composite geometric figures, which could include circles, given geometric formulas as needed.	1-2
	Q.5	**Computing volume and surface area of prisms and cylinders**	
6.EE.2c 7.G.6 8.G.9	Q.5.a	When given geometric formulas, compute volume and surface area of rectangular prisms. Solve for side lengths or height, when given volume or surface area.	1-3
7.G.6 8.G.9 6.EE.2c	Q.5.b	When given geometric formulas, compute volume and surface area of cylinders. Solve for height, radius, or diameter when given volume or surface area.	1-3
6.EE.2c 7.G.6 8.G.9	Q.5.c	When given geometric formulas, compute volume and surface area of right prisms. Solve for side lengths or height, when given volume or surface area.	1-3
	Q.6	**Computing volume and surface area of cones, pyramids, spheres, and other shapes**	
6.EE.2c 7.G.6 8.G.9	Q.6.a	When given geometric formulas, compute volume and surface area of right pyramids and cones. Solve for side lengths, height, radius, or diameter when given volume or surface area.	1-3
6.EE.2c 8.G.9	Q.6.b	When given geometric formulas, compute volume and surface area of spheres. Solve for radius or diameter when given the surface area.	1-3
6.EE.2c 7.G.6 8.G.9	Q.6.c	Compute surface area and volume of composite 3-D geometric figures, given geometric formulas as needed.	1-2
	Q.7	**Reading and interpreting graphs, charts, and other data representations**	
7.RP.2 3.MD.3	Q.7.a	Represent, and display categorical data in bar graphs or circle graphs. Interpret categorical data displayed in bar graphs or circle graphs.	1-2
S-ID.1	Q.7.b	Represent and display data involving one variable plot on the real number line including dot plots, histograms, and box plots. Interpret one-variable data displayed in dot plots, histograms, and box plots.	1-2
8.SP.1	Q.7.c	Represent and display data involving two variables in tables and the coordinate plane including scatter plots and graphs. Interpret two-variable data displayed in tables, scatter plots and graphs.	1-2
	Q.8	**Measuring the center of a statistical data set**	
6.SP.3 S-MD.2	Q.8.a	Calculate the mean, median, mode and range. Calculate a missing data value, given the average and all the missing data values but one, as well as calculating the average, given the frequency counts of all the data values, and calculating a weighted average. Know the effect of outliers.	1-3
	Q.9	**Determining sample space and using probability models to interpret data.**	
S-CP.9	Q.9.a	Use counting techniques to solve problems and determine combinations and permutations.	1-3
7.SP.7 7.SP.8 S-CP.1 S-CP.2	Q.9.b	Determine the probability of simple and compound events.	1-3

Common Core State Standards References	Algebraic Problem Solving Assessment Targets		Range of Depth of Knowledge
	A.1	**Simplifying, evaluating, and writing linear expressions**	
7.EE.1	A.1.a	Add, subtract, factor, multiply, and expand linear expressions with rational coefficients.	1-2
6.EE.2c	A.1.b	Evaluate linear expressions by substituting integers for unknown quantities.	1-2
6.EE.2a 6.EE.6	A.1.c	Write linear expressions as part of word-to-symbol translations or to represent common settings.	1-2
	A.2	**Simplifying, evaluating, and writing polynomial expressions**	
A-APR.1	A.2.a	Add, subtract, multiply polynomials, including multiplying two binomials, or divide factorable polynomials.	1-2
6.EE.2c	A.2.b	Evaluate polynomial expressions by substituting integers for unknown quantities.	1-2
A.SSE.2 A.SSE.3a A.SSE.4	A.2.c	Factor polynomial expressions.	1-2
6.EE.2a 6.EE.6	A.2.d	Write polynomial expressions as part of word-to-symbol translations or to represent common settings.	1-2
	A.3	**Simplifying, evaluating, and writing rational expressions**	
6.EE.3	A.3.a	Add, subtract, multiply and divide rational expressions.	1-3
6.EE.2c	A.3.b	Evaluate rational expressions by substituting integers for unknown quantities.	1-2
6.EE.2a 6.EE.6	A.3.c	Write rational expressions as part of word-to-symbol translations or to represent common settings.	1-2
	A.4	**Writing and solving linear equations**	
7.EE.4a 8.EE.7 A-REI.3	A.4.a	Solve one-variable linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms or equations with coefficients represented by letters. Includes solving routine first-degree equations.	1-2
7.EE.4 A-CED.1 A-CED.2	A.4.b	Solve real-world problems involving linear equations.	1-3
6.EE.6 A-CED.1 A-CED.2	A.4.c	Write one-variable and multi-variable linear equations to represent context.	1-2
8.EE.8 A-REI.6	A.4.d	Solve a system of two simultaneous linear equations by graphing, substitution, or linear combination. Solve real-world problems leading to a system of linear equations.	1-3
	A.5	**Writing and solving linear inequalities**	
A-REI.3	A.5.a	Solve linear inequalities in one variable with rational number coefficients.	1-2
6.EE.8 7.EE.4b	A.5.b	Identify or graph the solution to a one variable linear inequality on a number line.	1-2
7.EE.4 A-CED.1 A-CED.2	A.5.c	Solve real-world problems involving inequalities.	1-3

Common Core State Standards References	Algebraic Problem Solving Assessment Targets		Range of Depth of Knowledge
6.EE.2a A-CED.1 A-CED.2	A.5.d	Write linear inequalities in one variable to represent context.	1-2
	A.6	**Writing and solving quadratic equations**	
A-REI.4	A.6.a	Solve quadratic equations in one variable with rational coefficients and real solutions, using appropriate methods. (e.g. quadratic formula, completing the square, factoring, inspection)	1-3
A-CED.1	A.6.b	Write one-variable quadratic equations to represent context.	1-2
	A.7	**Graphing an equation in two variables in the coordinate plane; solving problems requiring knowledge of slope**	
6.NS.6c	A.7.a	Locate points in the coordinate plane.	1
8.F.4	A.7.b	Determine the slope of a line from a graph, equation, or table.	1-2
8.EE.5	A.7.c	Interpret unit rate as the slope in a proportional relationship.	2
A-CED.2 F-IF.7a	A.7.d	Graph two-variable linear equations.	1-2
	A.8	**Determining the equation of a line**	
A-CED.2	A.8.a	Write the equation of a line with a given slope through a given point.	1-2
A-CED.2	A.8.b	Write the equation of a line passing through two given distinct points.	2-3
	A.9	**Applying the slope criteria for parallel and perpendicular lines**	
G-GPE.5	A.9.a	Use slope to identify parallel and perpendicular lines and to solve geometric problems.	1-3
	A.10	**Evaluating a function for a given input**	
8.F.1 F-IF.1	A.10.a	Represent or identify a function in a table or graph as having exactly one output (one element in the range) for each input (each element in the domain).	1-2
F-IF.2	A.10.b	Evaluate linear and quadratic functions for values in their domain when represented using function notation.	1-2
	A.11	**Comparing functions in different presentations**	
8.EE.5	A.11.a	Compare two different proportional relationships represented in different ways. Examples include but are not limited to: compare a distance-time graph to a distance-time equation to determine which of two moving objects has a greater speed.	2-3
8.F.2 F-IF.9	A.11.b	Compare properties of two linear or quadratic functions each represented in a different way (algebraically, numerically in tables, graphically or by verbal descriptions). Examples include but are not limited to: given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.	2-3
	A.12	**Identifying features of a function from graphs or tables**	
8.F.3 8.F.5 F-IF.5	A.12.a	For a function that models a linear or nonlinear relationship between two quantities, interpret key features of graphs and tables in terms of quantities, and sketch graphs showing key features of graphs and tables in terms of quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior, and periodicity.	1-3

Mathematics Formula Sheet[15]

Area of a:

parallelogram	$A = bh$
trapezoid	$A = \frac{1}{2}h(b_1 + b_2)$

Surface Area and Volume of a:

rectangular/right prism	$SA = ph + 2B$	$V = Bh$
cylinder	$SA = 2\pi rh + 2\pi r^2$	$V = \pi r^2 h$
pyramid	$SA = \frac{1}{2}ps + B$	$V = \frac{1}{3}Bh$
cone	$SA = \pi rs + \pi r^2$	$V = \frac{1}{3}\pi r^2 h$
sphere	$SA = 4\pi r^2$	$V = \frac{4}{3}\pi r^3$

(p = perimeter of base B; $\pi \approx 3.14$)

Algebra

slope of a line	$m = \frac{y_2 - y_1}{x_2 - x_1}$
slope-intercept form of the equation of a line	$y = mx + b$
point-slope form of the equation of a line	$y - y_1 = m(x - x_1)$
standard form of a quadratic equation	$y = ax^2 + bx + c$
quadratic formula	$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$
Pythagorean Theorem	$a^2 + b^2 = c^2$
simple interest	$I = prt$ (I = interest, p = principal, r = rate, t = time)

15 The Mathematics Formula Sheet contains basic, essential information necessary for answering items on the Mathematics test. It will be available to test-takers during the entire Mathematics Test.

Science Assessment Targets

Content Specifications for the GED® Science Test

The GED® Science Test will focus on the fundamentals of science reasoning, striking a balance of deeper conceptual understanding, procedural skill and fluency, and the ability to apply these fundamentals in realistic situations. In order to stay true to this intention, each item on the Science Test will be aligned to one *science practice* and one *content topic*.

The science practices can be described as skills that are key to scientific reasoning in both textual and quantitative contexts. The science practices are derived from important skills enumerated in the Common Core State Standards as well as in The National Research Council's Framework for K-12 Science Education.

The Science Test will also focus on three major content domains: life science, physical science, and Earth and space science. The science content topics, which are drawn from these three domains, will provide context for measuring a test-taker's abilities to apply the reasoning skills described in the practices. The content topics focus on science that reflects both that which is taught in many high school-level science courses and that which is most relevant and useful for an adult population. To measure this content at a range of levels of complexity, several different item types will be used in the test, including multiple choice, short answer, drag-and-drop, hot spot, and fill-in-the-blank.

Given these priorities, the GED® Science Test adheres to the following parameters:

1. Approximately 40 percent of the test will focus on life science, roughly 40 percent will focus on physical science, and approximately 20 percent will focus Earth and space science.

2. The test will include items that test textual analysis and understanding, data representation and inference skills, as well as problem solving with science content.

3. Each item on the Science Test will be aligned to both one science practice and one content topic.

About the assessment: The science assessment targets are divided into two sections: the practices and the content topics. The science practices describe skills necessary for reasoning in a scientific context, while the content topics describe a body of knowledge typical of what is taught in American high schools. Items on the GED® Science Test will be aligned to one science practice indicator and one content subtopic each.

4. Each item will also be aligned to one Depth of Knowledge level of cognitive complexity, based on the appropriate alignment to a science practice.
5. Approximately 80 percent of the items will be written to a Depth of Knowledge level of 2 or higher.
6. The contexts within which problem solving skills will be measured will be taken from both academic and workforce contexts.
7. Approximately 50 percent of the items will be presented in item scenarios, in which a single stimulus (which may be textual, graphic or a combination of both) serves to inform two to three items. The rest of the items will be discrete.

About the assessment: Each science practice in the Science Assessment Targets correspond with standards from Common Core State Standards (CCSS) for Literacy in Science & Technical Subjects, and mathematics and/or practices from *A Framework for K-12 Science Education.*

For example, R.1 corresponds with CCSS Reading Anchor Standard 1m and 8.SP refers to skills introduced in the CCSS Grade 8 Statistics and Probability mathematics domain. Practices 1-8, however, are drawn from the scientific practices in A Framework for K-12 Science Education.

Click for more information about:

Common Core Standards for ELA and Literacy

Common Core State Standards for Mathematics

Scientific Practices in A Framework for K-12 Science Education

References to Common Core State Standards and Framework for K-12 Science Education[16]	Science Practices	Range of Depth of Knowledge (DOK) levels[17]
R.1, Practices 1, 5, and 8	**SP.1 Determining Details and Making Inferences**	
	a. Cite specific textual evidence to support inferences, conclusions or analyses of technical texts, attending to the precise details of explanations or descriptions of a process, event, phenomenon, or concept.	2-3
	b. Understand and explain the basic features of a scientific hypothesis or investigation and verify claims made based on evidence provided.	1-3
R.2, Practices 1 and 8	**SP.2 Determining Central Ideas, Hypotheses, and Conclusions**	
	a. Determine the central ideas or conclusions of a stimulus.	1-3
	b. Identify the hypotheses, conclusions, and data in a technical text, verifying the evidence and data when possible and corroborating or challenging conclusions with other sources of information.	2-3
	c. Provide an accurate summary of the stimulus.	2-3
	d. Develop valid (testable, objective) questions, evaluate whether questions are testable and objective, and refine hypotheses.	2-3
	e. Make evidence-based generalizations based on data and results.	2-3
	f. Draw conclusions based on scientific evidence, and indicate whether further information is needed to support a specific conclusion or to discriminate among several possible conclusions.	2-3
R.3, Practices 1, 5 and 7	**SP.3 Analyzing events and ideas**	
	a. Determine which explanation best accords with evidence.	2-3
	b. Analyze in detail a series of events or results described in a stimulus; determine whether earlier events/results caused later ones or are simply correlated with later events/results.	2-3
	c. Understand and analyze basic processes, methods, and tools in scientific concepts, theories, and designs of simple scientific experiments and investigations.	2-3
	d. Analyze key issues and assumptions in scientific models, theories, or experiments.	2-3
R.4.2, L.4.2, Practice 2	**SP.4 Interpreting Meaning of Symbols and Terms**	
	a. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific technical context.	2
	b. Identify and interpret independent and dependent variables in investigations that have controls.	2-3
	c. Interpret and apply scientific terms and concepts, formulas, and other symbolic representations of data based on research provided.	2

16 The GED® Science Practices are derived from The Common Core State Standards for ELA and Literacy (2010), The Common Core State Standards for Mathematics (2010), and the National Research Council's A Framework for K-12 Science Education: Practices, Crosscutting Concepts and Core Ideas (forthcoming).

17 The Depth of Knowledge (DOK) levels correspond to Norman Webb's (University of Wisconsin) Depth of Knowledge model of cognitive complexity.

References to Common Core State Standards and Framework for K-12 Science Education	Science Practices	Range of Depth of Knowledge (DOK) levels
R.5	**SP.5 Analyzing Structures**	
	a. Analyze the structure of the relationships among concepts in a stimulus, including relationships among key terms and concepts (e.g. force, friction, reaction force, energy).	2-3
	b. Determine how the value of one variable changes as the value of another variable changes in a complex data presentation.	2-3
	c. Predict the results of an additional trial or measurement in an experiment.	2-3
	d. Predict the future state of a model or system based on given information.	2-3
R.7, Practice 4	**SP.6 Integrating Content Presented in Diverse Ways**	
	a. Integrate quantitative or technical information expressed in words in a stimulus with a version of that information expressed visually (e.g. in a flowchart, diagram, model, graph, or table).	2-3
	b. Translate quantitative or technical information expressed in words in a stimulus into visual form (e.g. a table or chart) and translate information expressed visually or mathematically (e.g. in an equation) into words.	2-3
	c. Use numerical data to describe and compare experimental processes and results that are described in stimulus.	2-3
	d. Record and organize information in tables and graphs to communicate given scientific information, and identify relationships they reveal.	2-3
R.8, Practices 4 and 7	**SP.7 Evaluating Reasoning and Evidence**	
	a. Distinguish among facts, reasoned judgment based on research findings, and speculation in a stimulus.	2-3
	b. Assess the extent to which the reasoning and evidence in a stimulus support the author's claim or recommendation for solving a technical problem.	2-3
	c. Identify discrepant results and identify possible sources of error or uncontrolled conditions.	2-3
	d. Evaluate whether information (data, model) supports or contradicts a hypothesis, prediction, or conclusion, and why.	2-3
	e. Design an experiment to test a given hypothesis.	2-3
	f. Define, predict, analyze, and alter experimental designs to reduce sources of error.	2-3
R.9, Practices 2, 4 and 5	**SP.8 Analyzing Relationships Between Sources**	
	a. Compare findings presented in a stimulus to those from other sources, noting when the findings support or contradict other explanations or accounts.	2-3
	b. Identify strengths and weaknesses among one or more models or experiments.	2-3
	c. Identify similarities and differences between models and experiments.	2-3
	d. Determine which models or experiments would be supported or weakened by new data or evidence.	2-3

References to Common Core State Standards and Framework for K-12 Science Education	Science Practices	Range of Depth of Knowledge (DOK) levels
Q7: 7.RP., 3.MD.3, S-ID.1, 8.SP.1, S-ID.6, S-ID.7, Practice 8	**SP.9 Reading and interpreting graphs, charts and other data representations**	
	a. Interpret, use, and create graphs (e.g. scatterplot, line, bar, circle) including proper labeling. Predict reasonable trends based on the data (e.g. do not extend trend beyond a reasonable limit).	2
	b. Represent data on two variables (dependent and independent) on a graph. Analyze and communicate how the variables are related.	2
	c. Describe patterns in a dataset such as clustering, outliers, positive/negative association, and linear/nonlinear association and describe their implications.	2-3
	d. Distinguish between correlation and causation (i.e. correlation does not imply causation).	2-3
Q8: 6.SP.3, S-MD.2, 6.SP.2, 6.SP.5, S-ID.2, S-ID.3, S-ID.4, S-ID.9, Practices 4 and 5	**SP.10 Measuring the center of a statistical dataset**	
	a. Calculate the mean, median, mode, and range of a dataset.	1-2
	b. Calculate the average, given the frequency counts of all the data values.	1-2
	c. Calculate a weighted average and understand the effect of outliers.	1-2
Q9: S-CP.9, 7.SP.2, 7.SP.5, 7.SP.6, 7.SP.7, 7.SP.8, S-CP.1, S-CP.2, S-CP.5, Practice 3	**SP. 11 Determining sample space and using probability models to interpret data**	
	a. Use counting techniques to solve problems and determine combinations and permutations.	1-2
	b. Determine the probability of simple and compound events.	2
	c. Recognize and explain probability in context.	2
	d. Use data from a random sample to draw inferences about a population with an unknown characteristic of interest.	2-3
	e. Determine the probability of mutually exclusive, dependent, and independent events.	2-3
	f. Predict changes in probability based on changes in context.	2-3
Practices 3 and 5	**SP.12 Understanding and applying the appropriate tools, techniques and units in scientific investigations**	
	a. Identify and use proper measurement tools for each type of measurement.	1
	b. Identify, use and describe proper units for each type of measurement (e.g. centimeters for length).	1-2
	c. Convert between metric units and between metric and non-metric systems of measure given data and conversion factors.	1-2

Science Content Topics

The science content topics describe key concepts that are widely taught in a variety of high school-level courses and are relevant to the lives of GED® test-takers. The content topics are designed to provide context for measuring the skills defined in the science practices section of this document.

"The focusing themes function like a lens by drawing focus to a distinct subset of ideas within each content topic."

Focusing Themes

These themes have been selected to ensure that the test covers a wide range of important scientific topics, but they are also intended to function like a lens by drawing focus to a distinct subset of ideas within each content topic. That is, items from any of the three content domains of life science, physical science, and Earth and space science can pertain to one of these two themes, but content that falls outside the spheres of these themes will not appear on the Science Test.

- **Human Health and Living Systems**, the first focusing theme, pertains to material that is vital for the health and safety of all living things on the planet. Topics explored in this area of focus include the physical body and characteristics of humans and other living things. System of living organisms and related topics (e.g. diseases, evolution, and heredity) are also covered. This crosscutting concept also examines the mechanisms for how the human body works on chemical and physical levels. Within the domain of Earth and space science, topics are focused on how the environment affects living things and human society, as well as on how humans and other organisms affect the environment.

- **Energy and Related Systems**, the second focusing theme, deals with a fundamental part of the universe. Topics in this area of focus will cover sources of energy, transformations of energy, and uses of energy. Within the domain of life science, this theme will be reflected in content exploring how energy flows through organisms and ecosystems. Similarly, the Earth's geochemical systems will be touched upon in Earth and space science. Topics related to how humans gain energy in their bodies and the results of the use of that energy are also relevant to this theme.

The Science Content Topics Matrix below identifies the major topics in science and shows the relationship between each content topic and each focusing theme.

Science Content Topics Matrix

		Science Content Topics		
		Life Science (L) (40%)	Physical Science (P) (40%)	Earth and Space Science (ES) (20%)
Focusing Themes	**Human Health and Living Systems**	a. Human body and health b. Organization of life (structure and function of life) c. Molecular basis for heredity d. Evolution	a. Chemical Properties and Reactions Related to Human Systems	a. Interactions between Earth's systems and living things
	Energy and Related Systems	e. Relationships between life functions and energy intake f. Energy flows in ecologic networks (ecosystems)	b. Conservation, transformation, and flow of energy c. Work, motion, and forces	b. Earth and its system components and interactions c. Structure and organization of the cosmos

The science content topics and subtopics tables on the following pages break down each content topic into greater detail. Individual test items will be drawn from the subtopics.

Science Content Topics and Subtopics[18]

Life Science	
L.a	**Human Body and Health** L.a.1 Body systems (e.g. muscular, endocrine, nervous systems) and how they work together to perform a function (e.g. muscular and skeletal work to move the body) L.a.2 Homeostasis, feedback methods that maintain homeostasis (e.g. sweating to maintain internal temperature), and effects of changes in the external environment on living things (e.g. hypothermia, injury) L.a.3 Sources of nutrients (e.g. foods, symbiotic organisms) and concepts in nutrition (e.g. calories, vitamins, minerals) L.a.4 Transmission of disease and pathogens (e.g. airborne, bloodborne), effects of disease or pathogens on populations (e.g. demographics change, extinction), and disease prevention methods (e.g. vaccination, sanitation)
L.b	**Relationship Between Life Functions and Energy Intake** L.b.1 Energy for life functions (e.g. photosynthesis, respiration, fermentation)
L.c	**Energy Flows in Ecologic Networks (Ecosystems)** L.c.1 Flow of energy in ecosystems (e.g. energy pyramids), conservation of energy in an ecosystem (e.g. energy lost as heat, energy passed on to other organisms) and sources of energy (e.g. sunlight, producers, lower level consumer) L.c.2 Flow of matter in ecosystems (e.g. food webs and chains, positions of organisms in the web or chain) and the effects of change in communities or environment on food webs L.c.3 Carrying capacity, changes in carrying capacity based on changes in populations and environmental effects and limiting resources to necessary for growth L.c.4 Symbiosis (e.g. mutualism, parasitism, commensalism) and predator/prey relationships (e.g. changes in one population affecting another population) L.c.5 Disruption of ecosystems (e.g. invasive species, flooding, habitat destruction, desertification) and extinction (e.g. causes [human and natural] and effects)
L.d	**Organization of Life (Structure and Function of Life)** L.d.1 Essential functions of life (e.g. chemical reactions, reproduction, metabolism) and cellular components that assist the functions of life (e.g. cell membranes, enzymes, energy) L.d.2 Cell theory (e.g. cells come from cells, cells are the smallest unit of living things), specialized cells and tissues (e.g. muscles, nerve, etc.) and cellular levels of organization (e.g. cells, tissues, organs, systems) L.d.3 Mitosis, meiosis (e.g. process and purpose)

18 The GED® Science Content Topics are informed by the National Research Council's *A Framework for K-12 Science Education: Practices, Crosscutting Concepts and Core Ideas* 2011.

Life Science	
L.e	**Molecular Basis for Heredity** L.e.1 Central dogma of molecular biology, the mechanism of inheritance (e.g. DNA) and chromosomes (e.g. description, chromosome splitting during Meiosis) L.e.2 Genotypes, phenotypes and the probability of traits in close relatives (e.g. Punnett squares, pedigree charts) L.e.3 New alleles, assortment of alleles (e.g. mutations, crossing over), environmental altering of traits, and expression of traits (e.g. epigenetics, color-points of Siamese cats)
L.f	**Evolution** L.f.1 Common ancestry (e.g. evidence) and cladograms (e.g. drawing, creating, interpreting) L.f.2 Selection (e.g. natural selection, artificial selection, evidence) and the requirements for selection (e.g. variation in traits, differential survivability) L.f.3 Adaptation, selection pressure, and speciation

Physical Science	
P.a	**Conservation, Transformation, and Flow of Energy** P.a.1 Heat, temperature, the flow of heat results in work and the transfer of heat (e.g. conduction, convection) P.a.2 Endothermic and exothermic reactions P.a.3 Types of energy (e.g. kinetic, chemical, mechanical) and transformations between types of energy (e.g. chemical energy [sugar] to kinetic energy [motion of a body]) P.a.4 Sources of energy (e.g. sun, fossil fuels, nuclear) and the relationships between different sources (e.g. levels of pollutions, amount of energy produced) P.a.5 Types of waves, parts of waves (e.g. frequency, wavelength), types of electromagnetic radiation, transfer of energy by waves, and the uses and dangers of electromagnetic radiation (e.g. radio transmission, UV light and sunburns)
P.b	**Work, Motion, and Forces** P.b.1 Speed, velocity, acceleration, momentum, and collisions (e.g. inertia in a car accident, momentum transfer between two objects) P.b.2 Force, Newton's Laws, gravity, acceleration due to Gravity (e.g. freefall, law of gravitational attraction), mass and weight P.b.3 Work, simple machines (types and functions), mechanical advantages (force, distance, and simple machines), and power
P.c	**Chemical Properties and Reactions Related to Living Systems** P.c.1 Structure of matter P.c.2 Physical and chemical properties, changes of state, and density P.c.3 Balancing chemical equations and different types of chemical equations, conservation of mass in balanced chemical equations and limiting reactants P.c.4 Parts in solutions, general rules of solubility (e.g. hotter solvents allow more solute to dissolve), saturation and the differences between weak and strong solutions

Earth and Space Science	
ES.a	**Interactions between Earth's Systems and Living Things** ES.a.1 Interactions of matter between living and non-living things (e.g. cycles of matter) and the location, uses and dangers of fossil fuels ES.a.2 Natural Hazards (e.g. earthquakes, hurricanes, etc.) their effects (e.g. frequency, severity, and short- and long-term effects), and mitigation thereof (e.g. dikes, storm shelters, building practices) ES.a.3 Extraction and use of natural resources, renewable vs. non-renewable resources and sustainability
ES.b	**Earth and its System Components and Interactions** ES.b.1 Characteristics of the atmosphere, including its layers, gases and their effects on the Earth and its organisms, including climate change ES.b.2 Characteristics of the oceans (e.g. salt water, currents, coral reefs) and their effects on Earth and organisms ES.b.3 Interactions between Earth's systems (e.g. weathering caused by wind or water on rock, wind caused by high/low pressure and Earth rotation, etc.) ES.b.4 Interior structure of the Earth (e.g. core, mantle, crust, tectonic plates) and its effects (e.g. volcanoes, earth quakes, etc.) and major landforms of the Earth (e.g. mountains, ocean basins, continental shelves, etc.)
ES.c	**Structures and Organization of the Cosmos** ES.c.1 Structures in the universe (e.g. galaxies, stars, constellations, solar systems), the age and development of the universe, and the age and development of Stars (e.g. main sequence, stellar development, deaths of stars [black hole, white dwarf]) ES.c.2 Sun, planets, and moons (e.g. types of planets, comets, asteroids), the motion of the Earth's motion and the interactions within the Earth's solar system (e.g. tides, eclipses) ES.c.3 The age of the Earth, including radiometrics, fossils, and landforms

Social Studies Assessment Targets

Content Specifications for the GED® Social Studies Test

The GED® Social Studies Test will focus on the fundamentals of social studies reasoning, striking a balance of deeper conceptual understanding, procedural skill and fluency, and the ability to apply these fundamentals in realistic situations. In order to stay true to this intention, each item on the Social Studies Test will be aligned to one *social studies practice* and one *content topic*.

The social studies practices can be described as skills that are key to scientific reasoning in both textual and quantitative contexts. The practices come from important skills specified in the Common Core State Standards and other career- and college-readiness standards, as well as in National Standards for History.

The Social Studies Test will also focus on four major content domains: civics and government, United States history, economics, and geography and the world. The social studies content topics, which are drawn from these four domains, will provide context for measuring a test-taker's ability to apply the reasoning skills described in the practices. The content topics focus on key concepts that reflect both that which is taught in many high-school-level social sciences courses and that which is most relevant and useful for an adult population.

To measure this content at a range of levels of complexity, several different item types will be used in the test, including multiple choice, drag-and-drop, hot spot, and fill-in-the-blank. Additionally, the Social Studies Test will feature one extended-response task that will require test-takers to analyze arguments and use evidence found within brief excerpts from primary and secondary source texts.

Given these priorities, the GED® Social Studies Test follows these specifications:

1. Approximately 50 percent focuses on civics and government, 20 percent focuses on United States history, 15 percent focuses on economics, and 15 percent focuses on geography and the world.

About the assessment: The social studies assessment targets are divided into two sections: the *practices* and the *content topics*. The social studies practices describe skills necessary for reasoning in a social sciences context, while the content topics describe a body of knowledge typical of what is taught in American high schools.

Primary sources are artifacts, documents, or other sources of information that were created by someone with direct knowledge of an issue, or in the time period being studied. Primary sources serve as original sources of information about the topic.

A **secondary source** is a document or other source of information that cites, comments on, or builds upon primary sources.

2. The test includes items that assess textual analysis and understanding, data representation and inference skills, and problem solving using social studies content.

3. Social Studies Test items align to one social studies practice and one content topic.

4. Each item aligns to one DOK level, based on appropriate alignment to social studies practice.

5. Approximately 80 percent of the test items will be written to DOK level 2 or higher.

6. Problem-solving skills will be measured in both academic and workplace contexts.

7. Approximately 50 percent of the test items will be based on scenarios in which a single stimulus (textual, graphic or a combination of both) serves to inform two or three items; the remaining approximately 50 percent of the items will be discrete stand-alone items.

About the assessment: Each social studies practice in the Social Studies Assessment Targets corresponds with the Common Core State Standards (CCSS) for Literacy in History/ Social Studies, the CCSS for Mathematics, *NCSS National Curriculum Standards for Social Studies, as well as National Standards for History.*

For example, R.1 refers to CCSS Reading Anchor Standard 1 and 8.SP refers to CCSS Grade 8 Statistics and Probability standards. Similarly, NSH 3.F is drawn from the National Standards for History's (ital.) Historical Thinking Standard 3. Also, the NCSS literacy skills references pertain to a subset of the NCSS National Curriculum Standards.

Click for more information:

Common Core Standards for ELA and Literacy

Common Core State Standards for Mathematics

National Standards for History

NCSS National Curriculum Standards

References to Common Core State Standards, NCSS and NSH[19]	Social Studies Practices	Range of Depth of Knowledge (DOK) levels[20]
R.1, R.8	**SSP.1 Drawing Conclusions and Making Inferences**	
	a. Determine the details of what is explicitly stated in primary and secondary sources and make logical inferences or valid claims based on evidence.	2-3
	b. Cite or identify specific evidence to support inferences or analyses of primary and secondary sources, attending to the precise details of explanations or descriptions of a process, event, or concept.	1-3
R.2, NCSS Literacy Skills	**SSP.2 Determining Central Ideas, Hypotheses and Conclusions**	
	a. Determine the central ideas or information of a primary or secondary source document, corroborating or challenging conclusions with evidence.	1-3
	b. Describe people, places, environments, processes, and events, and the connections between and among them.	2-3
R.3, R.8	**SSP.3 Analyzing Events and Ideas**	
	a. Identify the chronological structure of a historical narrative and sequence steps in a process.	1-2 2-3
	b. Analyze in detail how events, processes, and ideas develop and interact in a written document; determine whether earlier events caused later ones or simply preceded them.	2-3
	c. Analyze cause-and-effect relationships and multiple causation, including action by individuals, natural and societal processes, and the influence of ideas.	2-3
	d. Compare differing sets of ideas related to political, historical, economic, geographic, or societal contexts; evaluate the assumptions and implications inherent in differing positions.	
R.4.2, L.4.2.	**SSP.4 Interpreting Meaning of Symbols, Words and Phrases**	
	a. Determine the meaning of words and phrases as they are used in context, including vocabulary that describes historical, political, social, geographic, and economic aspects of social studies.	1-3
R.6, NSH 3.F	**SSP.5 Analyzing Purpose and Point of View**	
	a. Identify aspects of a historical document that reveal an author's point of view or purpose (e.g., loaded language, inclusion or avoidance of particular facts).	2
	b. Identify instances of bias or propagandizing.	2-3
	c. Analyze how a historical context shapes an author's point of view.	2-3
	d. Evaluate the credibility of an author in historical and contemporary political discourse.	2-3

19 The GED® social studies practices are derived from The Common Core State Standards for ELA and Literacy (2010), The Common Core State Standards for Mathematics (2010), NCSS National Curriculum Standards for Social Studies: A Framework for Teaching, Learning, and Assessment (2010), and National Standards for History Revised Edition (1996).

20 The Depth of Knowledge (DOK) levels correspond with Norman Webb's (University of Wisconsin) Depth of Knowledge model of cognitive complexity.

References to Common Core State Standards, NCSS and NSH	Social Studies Practices	Range of Depth of Knowledge (DOK) levels
R.9.1, R.7.1, R.7.2, Q7: 7.RP., 3.MD.3, S-ID.1, 8.SP.1, S-ID.6, S-ID.7, NSH 2,	**SSP.6 Integrating Content Presented in Different Ways**	
	a. Integrate quantitative or technical analysis (e.g., charts, research data) with qualitative analysis in print or digital text.	2-3
	b. Analyze information presented in a variety of maps, graphic organizers, tables, and charts; and in a variety of visual sources such as artifacts, photographs, political cartoons.	2-3
	c. Translate quantitative information expressed in words in a text into visual form (e.g., table or chart); translate information expressed visually or mathematically into words.	1-3
R.8, NSH 3.E	**SSP.7 Evaluating Reasoning and Evidence**	
	a. Distinguish among fact, opinion, and reasoned judgment in a primary or secondary source document.	2-3
	b. Distinguish between unsupported claims and informed hypotheses grounded in social studies evidence.	2-3
R.9, R.7	**SSP.8 Analyzing Relationships between Texts**	
	a. Compare treatments of the same social studies topic in various primary and secondary sources, noting discrepancies between and among the sources.	2-3
R.1, W.1, W.2, W.4, W.5, L.1, L.2, L.4	**SSP.9 Writing Analytic Response to Source Texts [21]**	
	a. Produce writing that develops the idea(s), claim(s) and/or argument(s) thoroughly and logically, with well-chosen examples, facts, or details from primary and secondary source documents.	2-3
	b. Produce writing that introduces the idea(s) or claim(s) clearly; creates an organization that logically sequences information; and maintains a coherent focus.	2-3
	c. Write clearly and demonstrate sufficient command of standard English conventions.	1-2
Q7: 7.RP., 3.MD.3, S-ID.1, 8.SP.1, S-ID.6, S-ID.7	**SSP.10 Reading and Interpreting Graphs, Charts and Other Data Representation**	
	a. Interpret, use, and create graphs (e.g., scatterplot, line, bar, circle) including proper labeling. Predict reasonable trends based on the data (e.g., do not extend trend beyond a reasonable limit).	2-3
	b. Represent data on two variables (dependent and independent) on a graph; analyze and communicate how the variables are related.	2-3
	c. Distinguish between correlation and causation.	1-3
Q8: 6.SP.3, S-MD.2, 6.SP.2, 6.SP.5., S-ID.2, S-ID.3, S-ID.4, S-ID.9	**SSP.11 Measuring the Center of a Statistical Dataset**	
	a. Calculate the mean, median, mode, and range of a dataset.	1

21 The Extended Response writing task will require test-takers to apply a range of Social Studies Practices; however, the practices under SSP.9 will be of primary importance in the writing task, and these practices will only be assessed through the writing task.

Social Studies Content Topics

The social studies content topics describe key concepts that are widely taught in a variety of high-school level social studies courses and are relevant to the lives of GED® test-takers. They focus, in particular, on American civics and government. They are designed to provide context for measuring the skills defined in the social studies practices section of this document.

"The focusing themes function like a lens by drawing focus to a distinct subset of ideas within each content topic."

Focusing Themes

The content topics for the Social Studies Test focus on two main themes, each applied across the four domains in the social studies arena (i.e. civics and government, U.S. history, economics, and geography and the world). These themes have been selected to ensure that the test covers a wide range of important concepts and ideas in social studies, but they are also intended to function like a lens to draw focus to a distinct subset of ideas within each content topic. Content that falls outside the parameters of these themes will not be included in the new Social Studies Test.

- **Development of Modern Liberties and Democracy,** the first theme**,** explores the development of current ideas about democracy as well as human and civil rights from ancient civilizations to the present. It examines contemporary thinking, policies and structures, major events that have shaped our democratic values, and major thinkers who contributed to American ideas of democratic government.

- **Dynamic Responses in Societal Systems,** the second theme, explores how the systems, structures and policies that people have created respond to each other, conditions, and events. For example, societies and civilizations have developed and changed in response to particular geographic features and natural events. National economies respond to both governmental policies and natural laws of economics—such as supply and demand—around which policies are built. Similarly, countries respond to both internal and external changes and challenges in ways that are beyond the ability of any one person to control.

The Social Studies Content Topics Matrix below indentifies the major topics in social studies and shows the relationship between each content topic and each focusing theme. Each content topic in the matrix below contains a broad range of ideas. Additionally, each topic is aligned to a particular theme. The distribution of content across the themes is likely to vary, as the Development of Modern Liberties and Democracy theme easily lends itself to ideas relevant to civics and government as well as U.S. history, whereas the Dynamic Responses in Societal Systems is more closely tied to topics in economics and geography and the world.

Focusing Themes	Social Studies Topic Matrix			
	CG: Civics and Government (50%)	USH: U.S. History (20%)	E: Economics (15%)	G: Geography and the World (15%)
I. Development of Modern Liberties and Democracy	a. Types of modern and historical governments b. Principles that have contributed to development of American constitutional democracy c. Structure and design of United States government d. Individual rights and civic responsibilities	a. Key historical documents that have shaped American constitutional government b. Revolutionary and Early Republic Periods c. Civil War & Reconstruction d. Civil Rights Movement	a. Key economic events that have shaped American government and policies b. Relationship between political and economic freedoms	a. Development of classical civilizations
II. Dynamic Responses in Societal Systems	e. Political parties, campaigns, and elections in American politics f. Contemporary public policy	e. European population of the Americas f. World War I & II g. The Cold War h. American foreign policy since 9/11	c. Fundamental economic concepts d. Microeconomics and macroeconomics e. Consumer economics f. Economic causes and impacts of wars g. Economic drivers of exploration and colonization h. Scientific and Industrial Revolutions	b. Relationships between the environment and societal development c. Borders between peoples and nations d. Human migration

The social studies content topics and subtopics table that follows breaks down each topic into greater detail. Individual test items will be drawn from the subtopics.

Social Studies Content Topics and Subtopics

Civics and Government	
CG.a	**Types of modern and historical governments** CG.a.1 Direct democracy, representative democracy, parliamentary democracy, presidential democracy, monarchy and others types of government that contributed to the development of American constitutional democracy
CG.b	**Principles that have contributed to development of American constitutional democracy** CG.b.1 Natural rights philosophy CG.b.2 Popular sovereignty and consent of the governed CG.b.3 Constitutionalism CG.b.4 Majority rule and minority rights CG.b.5 Checks and balances CG.b.6 Separation of powers CG.b.7 Rule of law CG.b.8 Individual rights CG.b.9 Federalism
CG.c	**Structure and design of United States government** CG.c.1 Structure, powers, and authority of the federal executive, judicial, and legislative branches CG.c.2 Individual governmental positions (e.g. president, speaker of the house, cabinet secretary, etc.) CG.c.3 Major powers and responsibilities of the federal and state governments CG.c.4 Shared powers CG.c.5 The amendment process CG.c.6 Governmental departments and agencies
CG.d	**Individual rights and civic responsibilities** CG.d.1 The Bill of Rights CG.d.2 Personal and civil liberties of citizens
CG.e	**Political parties, campaigns, and elections in American politics** CG.e.1 Political parties CG.e.2 Interest groups CG.e.3 Political campaigns, elections and the electoral process
CG.f	**Contemporary Public Policy**

United States History	
USH.a	**Key historical documents that have shaped American constitutional government** USH.a.1 Key documents and the context and ideas that they signify (e.g. Magna Carta, Mayflower Compact, Declaration of Independence, United States Constitution, Martin Luther King's Letter from the Birmingham Jail, landmark decisions of the United States Supreme Court, and other key documents)
USH.b	**Revolutionary and Early Republic Periods** USH.b.1 Revolutionary War USH.b.2 War of 1812 USH.b.3 George Washington USH.b.4 Thomas Jefferson USH.b.5 Articles of Confederation USH.b.6 Manifest Destiny USH.b.7 U.S. Indian Policy
USH.c	**Civil War and Reconstruction** USH.c.1 Slavery USH.c.2 Sectionalism USH.c.3 Civil War Amendments USH.c.4 Reconstruction policies
USH.d	**Civil Rights** USH.d.1 Jim Crow laws USH.d.2 Women's suffrage USH.d.3 Civil Rights Movement USH.d.4 Plessy vs. Ferguson and Brown vs. Board of Education USH.d.5 Warren court decisions
USH.e	**European settlement and population of the Americas**
USH.f	**World Wars I & II** USH.f.1 Alliance system USH.f.2. Imperialism, nationalism, and militarism USH.f.3 Russian Revolution USH.f.4 Woodrow Wilson USH.f.5 Treaty of Versailles and League of Nations USH.f.6 Neutrality Acts USH.f.7 Isolationism USH.f.8 Allied and Axis Powers USH.f.9 Fascism, Nazism, and totalitarianism USH.f.10 The Holocaust USH.f.11 Japanese-American internment USH.f.12 Decolonization USH.f.13 GI Bill

United States History	
USH.g	**The Cold War** USH.g.1 Communism and capitalism USH.g.2 NATO and the Warsaw Pact USH.g.3 U.S. maturation as an international power USH.g.4 Division of Germany, Berlin Blockade and Airlift USH.g.5 Truman Doctrine USH.g.6 Marshall Plan USH.g.7 Lyndon B. Johnson and The Great Society USH.g.8 Richard Nixon and the Watergate scandal USH.g.9 Collapse of U.S.S.R. and democratization of Eastern Europe
USH.h	**American foreign policy since 9/11**

Economics	
E.a	**Key economic events that have shaped American government and policies**
E.b	**Relationship between political and economic freedoms**
E.c	**Fundamental Economic Concepts** E.c.1 Markets E.c.2 Incentives E.c.3 Monopoly and competition E.c.4 Labor and capital E.c.5 Opportunity cost E.c.6 Profit E.c.7 Entrepreneurship E.c.8 Comparative advantage E.c.9 Specialization E.c.10 Productivity E.c.11 Interdependence
E.d	**Microeconomics and Macroeconomics** E.d.1 Supply, demand and price E.d.2 Individual choice E.d.3 Institutions E.d.4 Fiscal and monetary policy E.d.5 Regulation and costs of government policies E.d.6 Investment E.d.7 Government and market failures E.d.8 Inflation and deflation E.d.9 GDP E.d.10 Unemployment E.d.11 Tariffs
E.e	**Consumer economics** E.e.1 Types of credit E.e.2 Savings and banking E.e.3 Consumer credit laws
E.f	**Economic causes and impacts of wars**
E.g	**Economic drivers of exploration and colonization**
E.h	**Scientific and Industrial Revolutions**

Geography	
G.a	**Development of classical civilizations**
G.b	**Relationships between the environment and societal development** G.b.1 Nationhood and statehood G.b.2 Sustainability G.b.3 Technology G.b.4 Natural resources G.b.5 Human changes to the environment
G.c	**Borders between peoples and nations** G.c.1 Concepts of region and place G.c.2 Natural and cultural diversity G.c.3 Geographic tools and skills
G.d	**Human migration** G.d.1 Immigration, emigration and diaspora G.d.2 Culture, cultural diffusion and assimilation G.d.3 Population trends and issues G.d.4 Rural and urban settlement

Reasoning Through Language Arts Test Passage Requirements and Exemplars

Passages selected for inclusion on the new GED® Reasoning Through Language Arts (RLA) Test must adhere to a number of guidelines with regard to both length and content.

- Stimulus passages for reading comprehension items will range from 400 to 900 words in length
- Cloze item editing passages will range from 350 to 450 words
- Extended-response passages will range from 550 to 650 words

Fiction (25%):

These passages should feature the conventions of good storytelling, such as characterization, thematic interest, and narrative thread. Literary elements (metaphor, imagery, etc.) and rich use of language are also helpful, though the items themselves will focus minimally on these elements. Excerpts should exhibit some sense of "completeness," even if they are not composed of a discrete text. The pool of fiction passages, taken as a whole, should contain a variety of passages such that they provide natural opportunities to assess test-taker understanding of the full range of RLA Assessment Targets.

Informational (75%):

These passages will be of high interest for a wide range of GED® test-takers. They will contain a variety of topics, focused around the three main categories of science, social studies, and workplace documents. These passages will reflect real-world situations and experiences.

- **Informational science**

  Passages in this category will focus on a broad interpretation of two main themes:

  1. Human health and living systems (e.g. nutrition, genetics, etc.)

2. Energy and related systems (e.g. conservation, modes of energy production, photosynthesis, etc.)

Some passages will be more academic in approach while others are directed toward a more popular audience, but all science passages will be interesting and engaging. Useful diagrams or graphics may occasionally accompany these passages in order provide a great opportunity for creative items and increase reader interest.

- **Informational social studies**

  Social studies passages on the RLA Test will be excerpts or articles pertaining to the theme of "the Great American Conversation." They may include excerpts from documents such as the Bill of Rights, the preamble to the U.S. Constitution (excluding the Declaration of Independence and the U.S. Constitution, as the reading levels of those documents exceed the high school-level target of the GED® test), and may also draw from any number of public speeches, U.S. Supreme Court decisions, and other writings that express important concepts about American civics. For instance, a letter about maintaining an archive of folk music lyrics and recordings from folk icon Woody Guthrie to a librarian at the National Archives is an example of an ideal passage. A letter from Teddy Roosevelt on the importance of preserving public land as national space would also be part of "the Great American Conversation." These documents might consist of correspondence, articles, speeches, journal entries, or other important kinds of primary or secondary documents informing or informed by American civics.

- **Informational workplace**

  These passages may include workplace letters, resume cover letters, letters to customer service departments, memos, flyers for company-sponsored events, explanations of initiatives, procedural documents, descriptions of activities, or changes in policies. They also include community-related documents like public postings or letters to the editor.

About the assessment: All of these passage types will appear on the RLA Test. The Social Studies Test will feature only one passage, which will consist of primary and/or secondary source documents that will serve as the source text for the extended-response item. There are no passages on the Science Test or the Mathematics Test.

Again, these documents reflect real-world situations and are engaging to a broad range of readers.

Passages for editing cloze item sets

These passages will not exceed 450 words. The subject matter for these passages will be drawn primarily from workplace and community documents, like the informational workplace passages described above. They will be similar to the types of texts that test-takers might encounter or produce in their daily lives. They will be written clearly and simply, but they will also provide variety in sentence structure and grammatical constructions so that range of elements of conventions defined in the Language Conventions and Usage targets can be measured.

Source texts for extended-response prompts:

These passages will not exceed 650 words. They may be drawn the same categories as the informational passages: social studies, science, and workplace. Some passages will feature paired texts, each relaying different aspects of a particular issue. These texts will include empirical support that is paraphrased from authentic sources. The prompts associated with these passages require test-takers to analyze arguments found within the source text(s) and use evidence directly from the text itself to support their responses. The GED® RLA Test extended-response (ER) prompts will be written with the intent to elicit responses that draw from the skills specified in the extended-response scoring rubric.

Other ER source texts and prompts will contain a small excerpt from a primary document and then one or two short pieces of opinion-based writing that include empirical support. The prompts for these passages will also focus on analysis of arguments and will require test-takers to cite evidence from the various source texts.

Passage Text Complexity

Passages on the new GED® assessment not only reflect a range of subject matter, but also a range of levels of complexity. The range of reading levels will be similar to range of those encountered in typical high school-level courses in English language arts, science, and social studies.

Cloze items contain response opportunities embedded directly within a text. The new GED® assessment will use this item type to assess language skills in tasks designed to mimic the editing process in an authentic manner. The items will present a brief text with three to six drop-down menus embedded within. The drop-down menus will contain several answer options which, when selected, will appear within the text itself.

The following series of excerpts are from Common Core State Standards appendix B. They are similar to the types of texts that appear on the new GED® RLA Test.

Passage Exemplars

Churchill, Winston. "Blood, Toil, Tears and Sweat: Address to Parliament on May 13th, 1940." Lend Me Your Ears: Great Speeches in History, 3rd Edition. Edited by William Safire. New York: W. W. Norton, 2004. (1940)

From "Winston Churchill Braces Britons to Their Task"

I say to the House as I said to ministers who have joined this government, I have nothing to offer but blood, toil, tears, and sweat. We have before us an ordeal of the most grievous kind. We have before us many, many months of struggle and suffering.

You ask, what is our policy? I say it is to wage war by land, sea, and air. War with all our might and with all the strength God has given us, and to wage war against a monstrous tyranny never surpassed in the dark and lamentable catalogue of human crime. That is our policy.

You ask, what is our aim? I can answer in one word. It is victory. Victory at all costs - Victory in spite of all terrors - Victory, however long and hard the road may be, for without victory there is no survival.

I take up my task in buoyancy and hope. I feel sure that our cause will not be suffered to fail among men. I feel entitled at this juncture, at this time, to claim the aid of all and to say, "Come then, let us go forward together with our united strength."

United States. Preamble and First Amendment to the United States Constitution. (1787, 1791)

Preamble

We, the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defence, promote the general Welfare, and secure the Blessings of Liberty to ourselves and

our Posterity, do ordain and establish this Constitution of the United States of America.

Amendment I
Congress shall make no law respecting the establishment of religion, or prohibiting the free exercise thereof; or abridging the freedom of speech, or of the press; or the right of people peaceably to assemble, and to petition the Government for a redress of grievances.

Petroski, Henry. "The Evolution of the Grocery Bag." *American Scholar* 72.4 (Autumn 2003). (2003)

That much-reviled bottleneck known as the American supermarket checkout lane would be an even greater exercise in frustration were it not for several technological advances. The Universal Product Code and the decoding laser scanner, introduced in 1974, tally a shopper's groceries far more quickly and accurately than the old method of inputting each purchase manually into a cash register. But beeping a large order past the scanner would have led only to a faster pileup of cans and boxes down the line, where the bagger works, had it not been for the introduction, more than a century earlier, of an even greater technological masterpiece: the square-bottomed paper bag.

The geometry of paper bags continues to hold a magical appeal for those of us who are fascinated by how ordinary things are designed and made. Originally, grocery bags were created on demand by storekeepers, who cut, folded, and pasted sheets of paper, making versatile containers into which purchases could be loaded for carrying home. The first paper bags manufactured commercially are said to have been made in Bristol, England, in the 1840s. In 1852, a "Machine for Making Bags of Paper" was patented in America by Francis Wolle, of Bethlehem, Pennsylvania. According to Wolle's own description of the machine's operation, "pieces of paper of suitable length are given out from a roll of the required width, cut off from the roll and otherwise suitably cut to the required shape, folded, their edges pasted and lapped, and formed into complete and perfect bags." The "perfect bags" produced at the rate of eighteen hundred per hour by Wolle's machine were, of course, not perfect, nor was his machine. The history of design has yet to see the development of a perfect object, though it has seen many

satisfactory ones and many substantially improved ones. The concept of comparative improvement is embedded in the paradigm for invention, the better mousetrap. No one is ever likely to lay claim to a "best" mousetrap, for that would preclude the inventor himself from coming up with a still better mousetrap without suffering the embarrassment of having previously declared the search complete. As with the mousetrap, so with the bag.

"Space Probe." *Astronomy & Space: From the Big Bang to the Big Crunch*. Edited by Phillis Engelbert. Farmington Hills, Mich.: Gale Cengage Learning, 2009. (2009)

A space probe is an unpiloted spacecraft that leaves Earth's orbit to explore the Moon, planets, asteroids, comets, or other objects in outer space as directed by onboard computers and/or instructions send from Earth. The purpose of such missions is to make scientific observations, such as taking pictures, measuring atmospheric conditions, and collecting soil samples, and to bring or report the data back to Earth.

Numerous space probes have been launched since the former Soviet Union first fired Luna 1 toward the Moon in 1959. Probes have now visited each of the eight planets in the solar system.

In fact, two probes—Voyager 1 and Voyager 2—are approaching the edge of the solar system, for their eventual trip into the interstellar medium. By January 2008 Voyager 1 was about 9.4 billion miles (15.2 billion kilometers) from the Sun and in May 2008 it entered the heliosheath (the boundary where the solar wind is thought to end), which is the area that roughly divides the solar system from interstellar space. Voyager 2 is not quite as far as its sister probe. Voyager 1 is expected to be the first human space probe to leave the solar system. Both Voyager probes are still transmitting signals back to Earth. They are expected to help gather further information as to the true boundary of the solar system.

The earliest probes traveled to the closest extraterrestrial target, the Moon. The former Soviet Union launched a series of Luna probes that provided humans with first pictures of the far side of the Moon. In 1966, Luna 9 made the first

successful landing on the Moon and sent back television footage from the Moon's surface.

The National Aeronautics and Space Administration (NASA) initially made several unsuccessful attempts to send a probe to the Moon. Not until 1964 did a Ranger probe reach its mark and send back thousands of pictures. Then, a few months after Luna 9, NASA landed Surveyor on the Moon.

In the meantime, NASA was moving ahead with the first series of planetary probes, called Mariner. Mariner 2 first reached the planet Venus in 1962. Later Mariner spacecrafts flew by Mars in 1964 and 1969, providing detailed images of that planet. In 1971, Mariner 9 became the first spacecraft to orbit Mars. During its year in orbit, Mariner 9's two television cameras transmitted footage of an intense Martian dust storm, as well as images of 90 percent of the planet's surface and the two Martian natural satellites (moons).

Encounters were also made with Mars in 1976 by the U.S. probes Viking 1 and Viking 2. Each Viking spacecraft consisted of both an orbiter and a lander. Viking 1 made the first successful soft landing on Mars on July 20, 1976. Soon after, Viking 2 landed on the opposite side of the planet. The Viking orbiters made reports on the Martian weather and photographed almost the entire surface of the planet.

Henry, O. "The Gift of the Magi." ***The Best Short Stories of O. Henry.*** **New York: Modern Library, 1994. (1906)**

White fingers and nimble tore at the string and paper. And then an ecstatic scream of joy; and then, alas! a quick feminine change to hysterical tears and wails, necessitating the immediate employment of all the comforting powers of the lord of the flat.

For there lay The Combs—the set of combs, side and back, that Della had worshipped long in a Broadway window. Beautiful combs, pure tortoise shell, with jewelled rims—just the shade to wear in the beautiful vanished hair. They were expensive combs, she knew, and her heart had simply craved and yearned over them without the least hope of possession. And now, they were hers, but the tresses that should have adorned the coveted adornments were gone.

But she hugged them to her bosom, and at length she was able to look up with dim eyes and a smile and say: "My hair grows so fast, Jim!"

And then Della leaped up like a little singed cat and cried, "Oh, oh!"

Jim had not yet seen his beautiful present. She held it out to him eagerly upon her open palm. The dull precious metal seemed to flash with a reflection of her bright and ardent spirit.

"Isn't it a dandy, Jim? I hunted all over town to find it. You'll have to look at the time a hundred times a day now. Give me your watch. I want to see how it looks on it."

Instead of obeying, Jim tumbled down on the couch and put his hands under the back of his head and smiled.

"Dell," said he, "let's put our Christmas presents away and keep 'em a while. They're too nice to use just at present. I sold the watch to get the money to buy your combs. And now suppose you put the chops on."

The magi, as you know, were wise men—wonderfully wise men—who brought gifts to the Babe in the manger. They invented the art of giving Christmas presents. Being wise, their gifts were no doubt wise ones, possibly bearing the privilege of exchange in case of duplication. And here I have lamely related to you the uneventful chronicle of two foolish children in a flat who most unwisely sacrificed for each other the greatest treasures of their house. But in a last word to the wise of these days let it be said that of all who give gifts these two were the wisest. Of all who give and receive gifts, such as they are wisest. Everywhere they are wisest. They are the magi.

Twain, Mark. *The Adventures of Tom Sawyer*. New York: Modern Library, 2001. (1876)

From Chapter 2: "The Glorious Whitewasher"

But Tom's energy did not last. He began to think of the fun he had planned for this day, and his sorrows multiplied. Soon the free boys would come tripping along on all sorts of delicious expeditions, and they would make a world of fun of him for having to work—the very thought of it burnt him like fire. He got out his worldly wealth and examined it—bits of toys,

marbles, and trash; enough to buy an exchange of WORK, maybe, but not half enough to buy so much as half an hour of pure freedom. So he returned his straitened means to his pocket, and gave up the idea of trying to buy the boys. At this dark and hopeless moment an inspiration burst upon him! Nothing less than a great, magnificent inspiration.

He took up his brush and went tranquilly to work. Ben Rogers hove in sight presently—the very boy, of all boys, whose ridicule he had been dreading. Ben's gait was the hop-skip-and-jump—proof enough that his heart was light and his anticipations high. He was eating an apple, and giving a long, melodious whoop, at intervals, followed by a deeptoned ding-dong-dong, ding-dong-dong, for he was personating a steamboat. As he drew near, he slackened speed, took the middle of the street, leaned far over to starboard and rounded to ponderously and with laborious pomp and circumstance—for he was personating the Big Missouri, and considered himself to be drawing nine feet of water. He was boat and captain and engine-bells combined, so he had to imagine himself standing on his own hurricane-deck giving the orders and executing them:

"Stop her, sir! Ting-a-ling-ling!" The headway ran almost out, and he drew up slowly toward the sidewalk.

"Ship up to back! Ting-a-ling-ling!" His arms straightened and stiffened down his sides.

"Set her back on the stabboard! Ting-a-ling-ling! Chow! ch-chow-wow! Chow!" His right hand, meantime, describing stately circles—for it was representing a forty-foot wheel.

"Let her go back on the labboard! Ting-a-lingling! Chow-ch-chow-chow!" The left hand began to describe circles.

"Stop the stabboard! Ting-a-ling-ling! Stop the labboard! Come ahead on the stabboard! Stop her! Let your outside turn over slow! Ting-a-ling-ling! Chow-ow-ow! Get out that head-line! LIVELY now! Come—out with your spring-line—what're you about there! Take a turn round that stump with the bight of it! Stand by that stage, now—let her go! Done with the engines, sir! Ting-a-ling-ling! SH'T! S'H'T! SH'T!" (trying the gauge-cocks)."

Tom went on whitewashing—paid no attention to the steamboat. Ben stared a moment and then said: "Hi-YI! YOU'RE up a stump, ain't you!"

No answer. Tom surveyed his last touch with the eye of an artist, then he gave his brush another gentle sweep and surveyed the result, as before. Ben ranged up alongside of him. Tom's mouth watered for the apple, but he stuck to his work. Ben said:

"Hello, old chap, you got to work, hey?"

Tom wheeled suddenly and said:

"Why, it's you, Ben! I warn't noticing."

"Say—I'm going in a-swimming, I am. Don't you wish you could? But of course you'd druther WORK—wouldn't you? Course you would!"

Tom contemplated the boy a bit, and said:

"What do you call work?"

"Why, ain't THAT work?"

Tom resumed his whitewashing, and answered carelessly:

"Well, maybe it is, and maybe it ain't. All I know, is, it suits Tom Sawyer."

"Oh come, now, you don't mean to let on that you LIKE it?"

The brush continued to move.

"Like it? Well, I don't see why I oughtn't to like it. Does a boy get a chance to whitewash a fence every day?"

That put the thing in a new light. Ben stopped nibbling his apple. Tom swept his brush daintily back and forth—

stepped back to note the effect—added a touch here and there—criticised the effect again—Ben watching every move and getting more and more interested, more and more absorbed. Presently he said:

"Say, Tom, let ME whitewash a little."

Tom considered, was about to consent; but he altered his mind:

"No—no—I reckon it wouldn't hardly do, Ben. You see, Aunt Polly's awful particular about this fence—right here on the street, you know—but if it was the back fence I wouldn't mind and SHE wouldn't. Yes, she's awful particular about this fence; it's got to be done very careful; I reckon there ain't one boy in a thousand, maybe two thousand, that can do it the way it's got to be done."

"No—is that so? Oh come, now—lemme just try. Only just a little—I'd let YOU, if you was me, Tom."